

Updated Blue Marlin Catches (2012-2014) in the North and South Pacific from WCPFC Data¹

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Abstract

This working paper presents catch summaries and distribution plots of blue marlin in the North Pacific and South Pacific from non-ISC member countries. The data was provided by the WCPFC for longline catches of blue marlin only. The purpose was to provide the ISC Billfish Working Group with billfish catch data not available in the ISC or ISC Working Groups data holdings. This blue marlin catch data has been made available to the ISC for stock assessment purposes. Total catches of blue marlin in metric tons are presented for each ISC and WCPFC country. Spatial distribution plots for all years and the most recent 3-year period (2012-2014) are also presented for the ISC countries, China and Indonesia.

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INTRODUCTION

WCPFC Data Holdings

The Western and Central Pacific Fisheries Commission (WCPFC) was established by the Convention for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (WCPF Convention) in June 2004. The WCPFC currently has 25 member countries, 7 Participating Territories, and 7 Cooperating Non-Members.

Japan, Chinese Taipei, Korea, and the United States of America (USA) are member countries of both the ISC and the WCPFC. Many other WCPFC member countries fish in the North Pacific but are not members of the ISC.

METHODS

The WCPFC provided to the ISC Billfish Working Group historical longline catch data for blue marlin (*Makaira nigricans*) in the North and South Pacific. These Category I data are presented in Table 1 by country for cumulative catch in metric tons, total years, and catch per year. The catch per year is presented for all years, for the 5-year period of 2007-2011, and for the 3-year period of 2012-2014.

For comparison, blue marlin longline catches from the WCPFC database are also presented for ISC countries Japan, Chinese Taipei, Korea, and the USA.

The WCPFC also provided Category II data, aggregated catch and effort data by 5-degree squares and by year/quarters for member countries. These data are presented for the entire catch history and the most recent 3-year period (2012-2014) for the 6 countries with the largest blue marlin catches in Figures 2-8.

The WCPFC also provided Category III data, size frequency data by 5-degree squares and year. These data will be briefly summarized in a separate presentation and working paper by another member of the Billfish Working Group.

RESULTS

The total catch of blue marlin for ISC members from the WCPFC longline data is presented in Table 1 for all years through 2014, as well as for the most recent 3-year period of 2012-2014.

The total catch of blue marlin for non-ISC members from the WCPFC longline data is also presented in Table 1 for all years through 2014, as well as for the most recent 3-year period of 2012-2014. China and Indonesia have the greatest cumulative catches.

The total catch of blue marlin for ISC members for all years from the WCPFC longline data is 576,645 metric tons (Table 1). About 49% of that total is produced by Japan, about 37% is produced by Chinese Taipei, and about 13% is produced by Korea. Japan produced a mean catch of 5,282 mt per year from 1962-2014.

The total catch of blue marlin for non-ISC members for all years from the WCPFC longline data is 83,649 metric tons (Table 1). About 31% of that total is produced by China, about 30% is produced by Indonesia, about 8% is produced by French Polynesia, and about 7% is produced by Vietnam. China produced a mean catch of 957 mt per year from 1988 to 2014, and Indonesia produced a mean catch of 674 mt per year from 1978 to 2014.

Distribution of Blue Marlin Longline Catch and Effort

Figure 1 displays the distribution of blue marlin longline catches in the North Pacific by ISC and non-ISC WCPFC member countries (I = ISC, W = WCPFC). Here ISC member countries are Japan, Chinese Taipei, Korea, and the USA.

Figure 2 displays the distribution of blue marlin longline catch and effort in the North and South Pacific for all WCPFC countries for all years. Note that the catch totals are in weight caught (mt); effort is in 1000 hooks.

Figure 3 displays the distribution of blue marlin longline catch and effort in the North and South Pacific for Japan for all years (1962-2014) and for 2012-2014. Note that the catch totals are in weight caught (mt); effort is in 1000 hooks.

Figure 4 displays the distribution of blue marlin longline catch and effort in the North and South Pacific for Chinese Taipei for all years (1958-2014) and for 2012-2014. Note that the catch totals are in weight caught (mt); effort is in 1000 hooks.

Figure 5 displays the distribution of blue marlin longline catches in the North and South Pacific for Korea for all years (1975-2014) and for 2012-2014. Note that the catch totals are in weight caught (mt); effort is in 1000 hooks.

Figure 6 displays the distribution of blue marlin longline catches in the North and South Pacific for Indonesia for all years (1978-2014) and for 2012-2014. Note that the catch totals are in weight caught (mt); effort is in 1000 hooks.

Figure 7 displays the distribution of blue marlin longline catches in the North and South Pacific for China for all years (1988-2014) and for 2012-2014. Note that the catch totals are in weight caught (mt); effort is in 1000 hooks.

Figure 8 displays the distribution of blue marlin longline catches in the North and South Pacific for the USA for all years (1980-2014) and for 2012-2014. Note that the catch totals are in weight caught (mt); effort is in 1000 hooks.

CONCLUSIONS

From the total catch of blue marlin (660,294 mt) from the WCPFC longline database for all years, about 87% (576,645 mt) was caught by ISC members (Chinese Taipei, Japan, Korea, and the USA), and about 13% (83,649) was caught by non-ISC members (Table 1).

Chinese Taipei continued to be the leading producer among ISC members in recent years with a catch per year of 6,266 mt for 2012-2014. Japan and Korea followed with catch per year of 2,016 mt and 1,700 mt, respectively, for 2012-2014. Chinese Taipei had yearly catches greater than 5,000 mt since 1993.

Of the non-ISC members in the WCPFC, the leading producers by catch per year in 2012-2014 (Table 1) were China (1,849 mt), Indonesia (1,163 mt), Vanuatu (492 mt), Vietnam (299 mt), and French Polynesia (241 mt). China has averaged catches over 1,500 mt per year since 2003; Indonesia has averaged catches over 1,100 mt per year since 2003.

From the distribution plots of blue marlin longline catch and effort in the North and South Pacific for 2012-2014, Chinese Taipei had the largest cumulative effort (663,458 in 1000 hooks), followed by Indonesia (492,142 in 1000 hooks), China (417,435 in 1000 hooks), Japan (368,617 in 1000 hooks), Korea (186,819 in 1000 hooks), and the USA (131,357 in 1000 hooks). The remaining 24% of the total longline effort for all countries is accounted for by the other 22 WCPFC countries.

Chinese Taipei and Japan generally fished throughout the western and central Pacific Ocean in 2012-2014. Korea and China generally fished around the equator from 10 degrees North to 20 degrees South. Indonesia's fishing effort was primarily focused around the equator between 120 degrees East and 135 degrees East longitudes (in the seas between the Philippines, Indonesia, and Papua New Guinea).

REFERENCES

Tagami, Darryl and Haiying Wang.

2012. Blue Marlin Catches in the North and South Pacific from WCPFC Data. ISC/12/BILLWG-1/02

Tagami, Darryl and Haiying Wang.

2013. Updated Blue Marlin Catches in the North and South Pacific from WCPFC Data. ISC/13/BILLWG-1/11

Table 1 – Blue marlin longline cumulative catch (mt) by country from WCPFC database

	Total Catch (all years)	Total Years	Catch per Year (all years)	Catch per Year (2007-2011)	Total Catch (2012-2014)	Catch per Year (2012-2014)
ISC Countries						
Japan	279,959	53	5,282	2,543	6,049	2,016
Taiwan	211,803	57	3,716	6,286	18,797	6,266
Korea	73,977	40	1,849	2,181	5,100	1,700
USA	10,906	35	312	339	1,171	390
	576,645				31,117	
WCPFC Countries						
China	25,838	27	957	1,235	5,547	1,849
Indonesia	24,924	37	674	1,162	3,489	1,163
Fr Poly	6,297	25	252	247	724	241
Vietnam	5,925	15	395	429	898	299
Fiji	4,227	25	169	149	579	193
Philippines	3,953	44	90	48	10	3
Vanuatu	3,719	17	219	143	1,475	492
FSM	1,887	24	79	183	424	141
PNG	1,783	20	89	133	553	184
Solomon	955	22	43	277	0	0
Australia	728	30	24	18	67	22
New Caledonia	711	30	24	12	23	8
Cook Islands	666	17	39	32	161	54
Western Samoa	514	22	23	12	26	9
Tonga	484	33	15	15	108	36
Marshall Islands	253	8	32	41	34	11
Spain	195	9	22	19	13	4
Portugal	162	4	41	1	161	54
Tuvalu	159	4	40	39	120	40
Belize	158	20	8	21	37	12
Kiribati	78	7	11	2	72	24
Niue	24	6	4	5	0	0
Senegal	7	2	4	5	0	0
New Zealand	2	2	1	0	0	0
	83,649				14,521	

Figure 1. Distribution of blue marlin catches by ISC and WCPFC (non-ISC) countries for all years combined

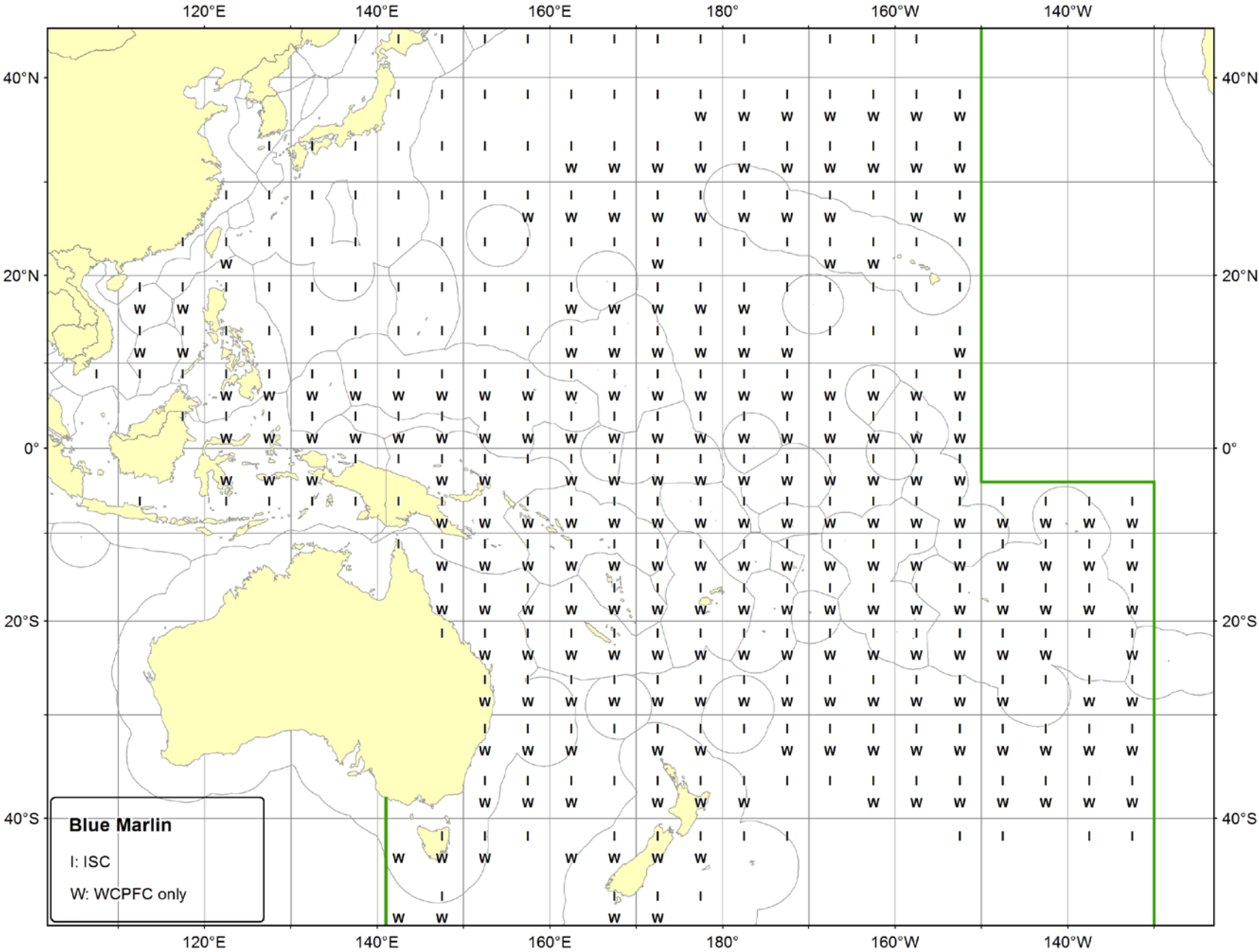


Figure 2. Blue Marlin (all years): summed Catch (mt) and 1K Hooks by all WCPFC countries

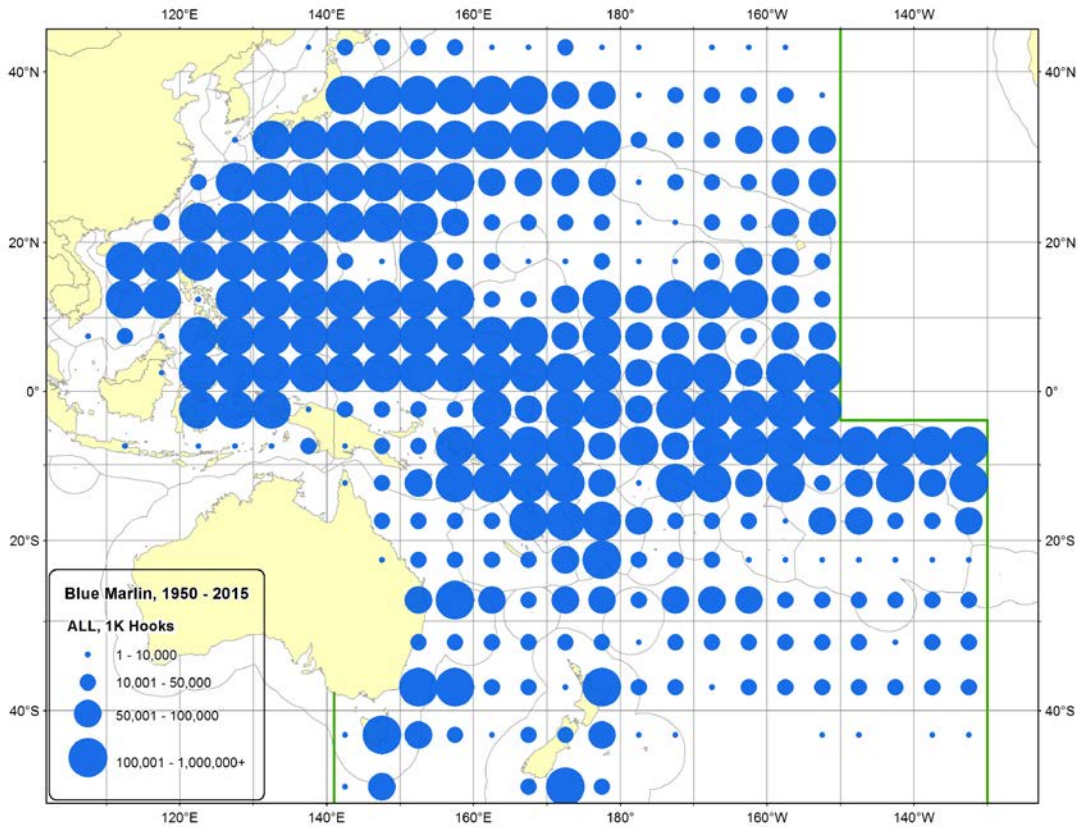
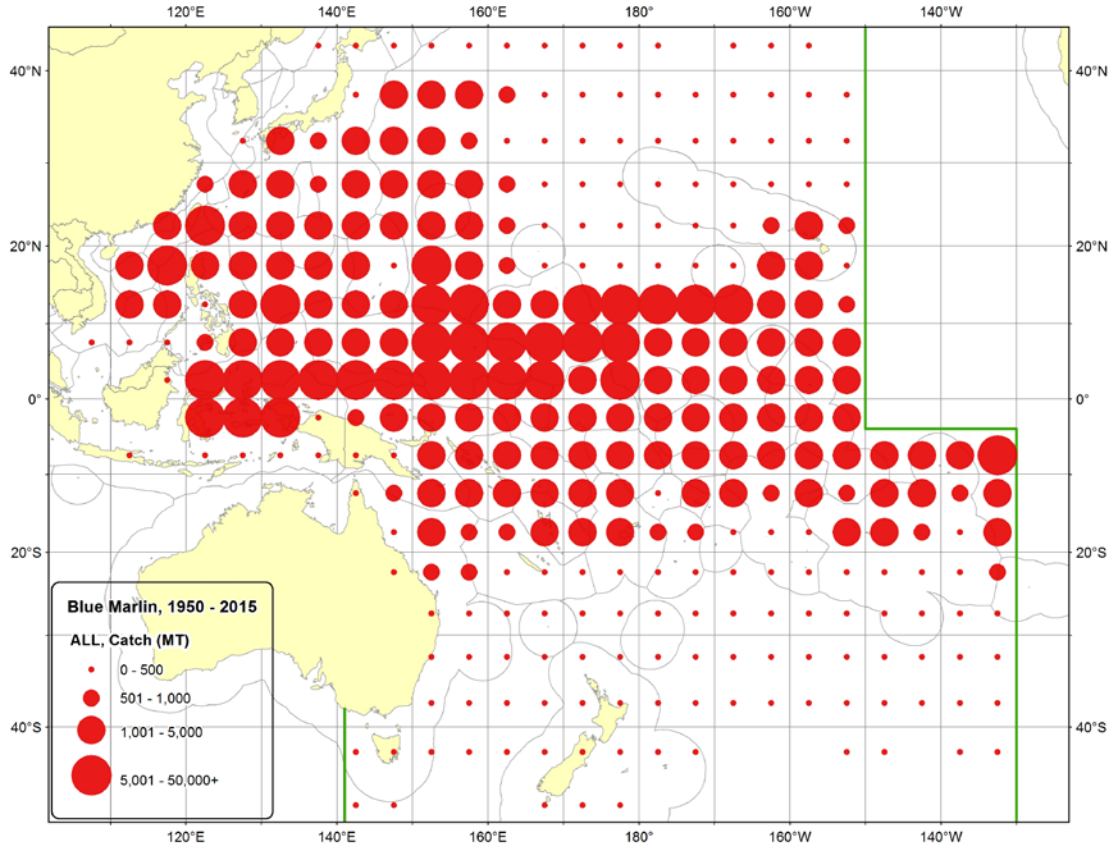


Figure 2. Blue Marlin 2012-2014: summed Catch (mt) and 1K Hooks by all WCPFC countries

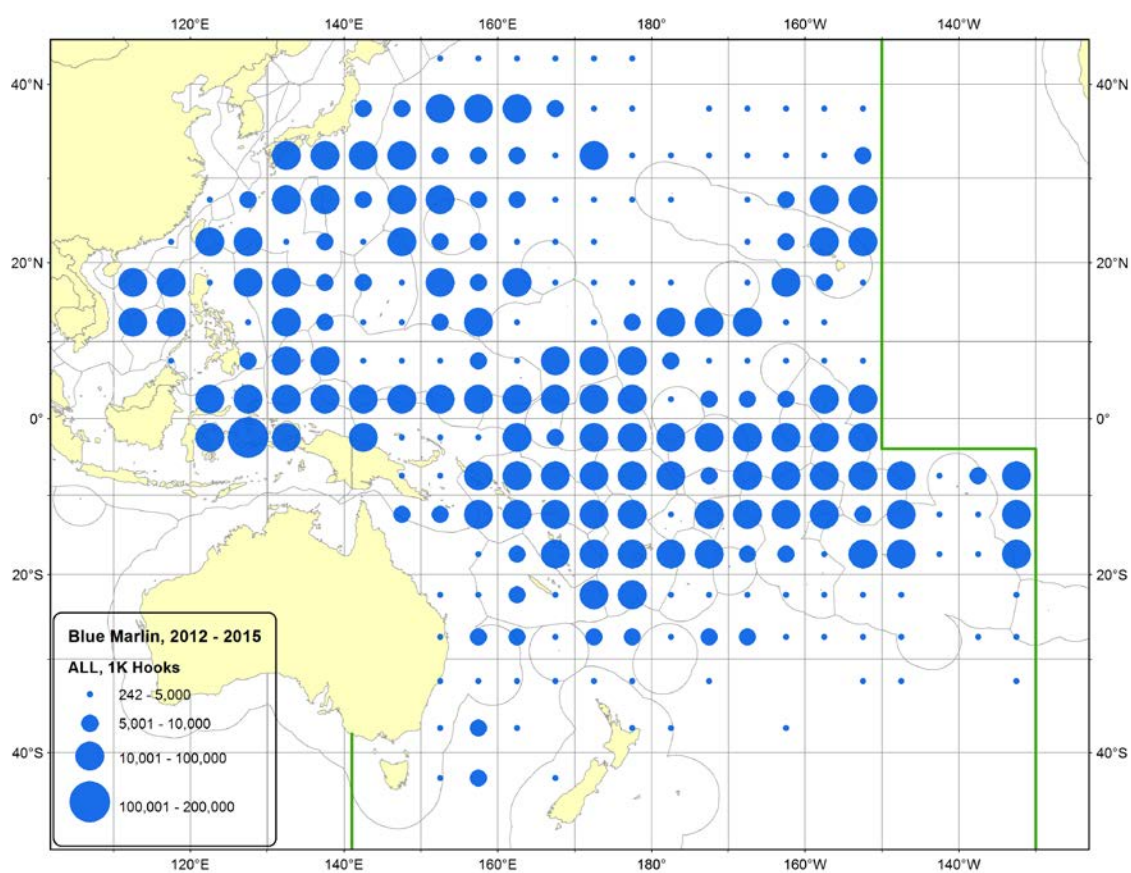
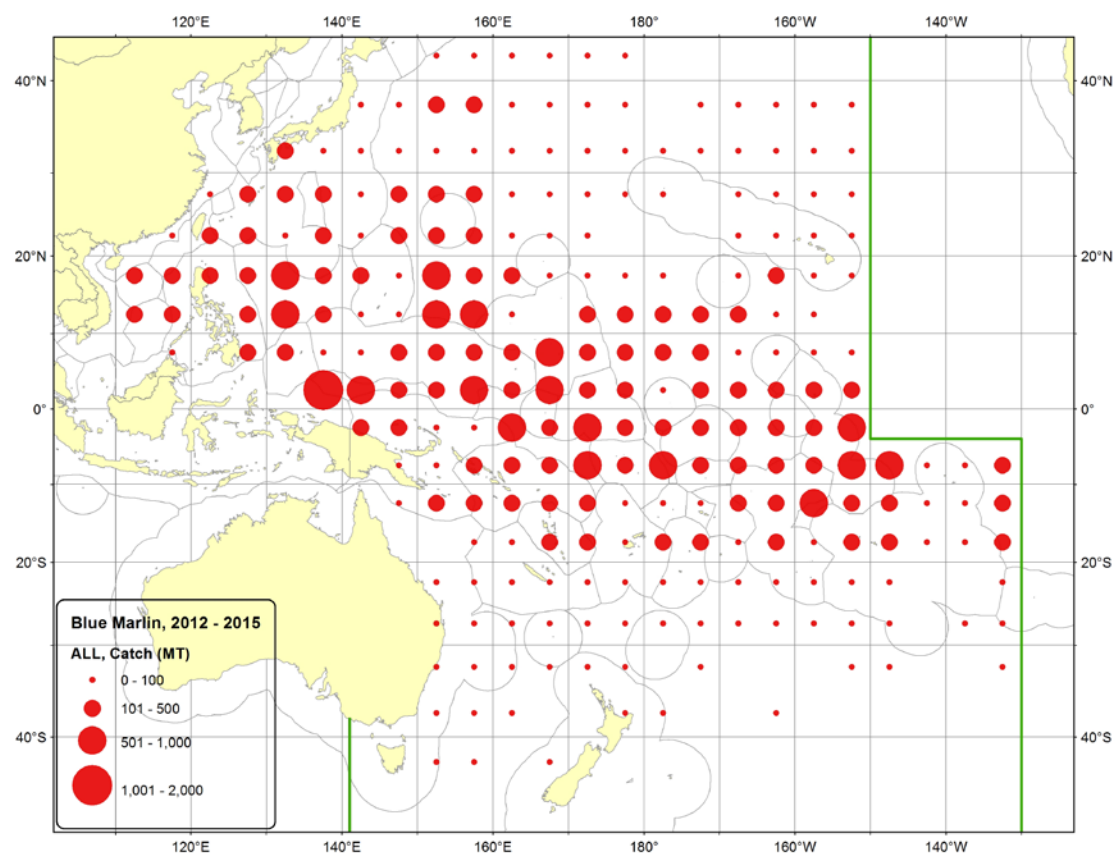


Figure 3. Blue Marlin (all years): summed Catch (mt) and 1K Hooks by Japan, 1962-2014

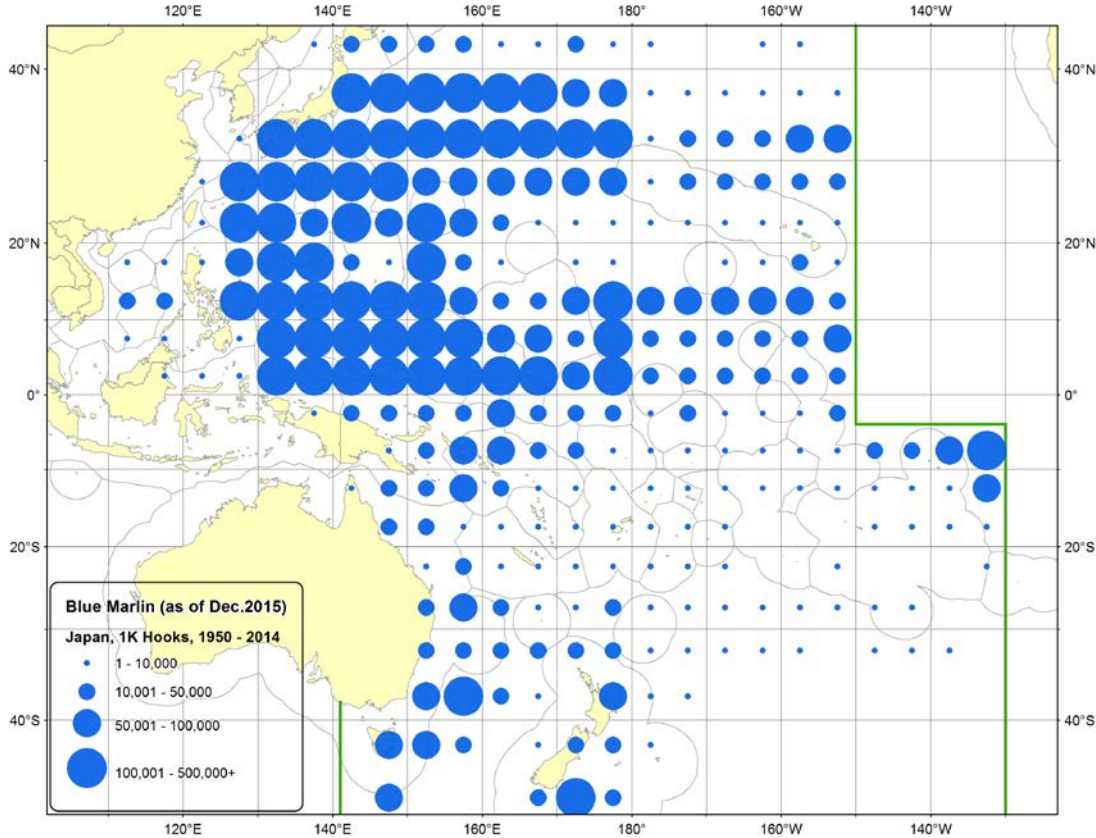
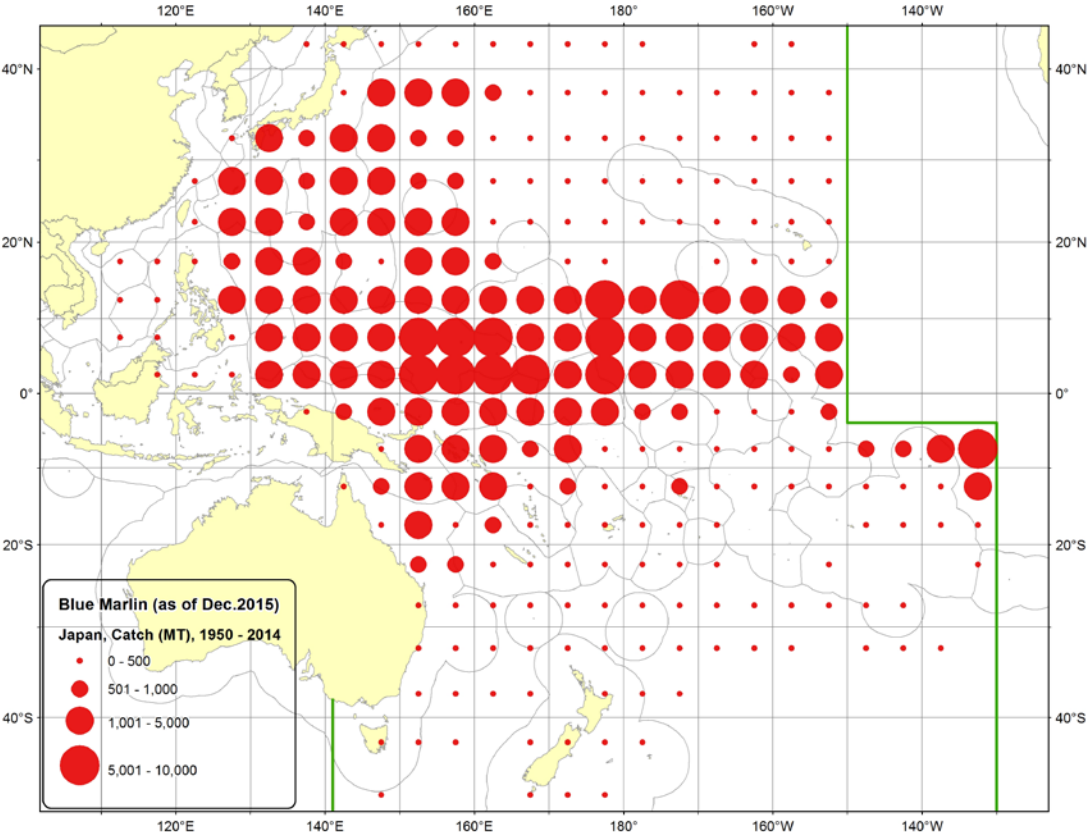


Figure 3. Blue Marlin: summed Catch (mt) and 1K Hooks by Japan, 2012-2014

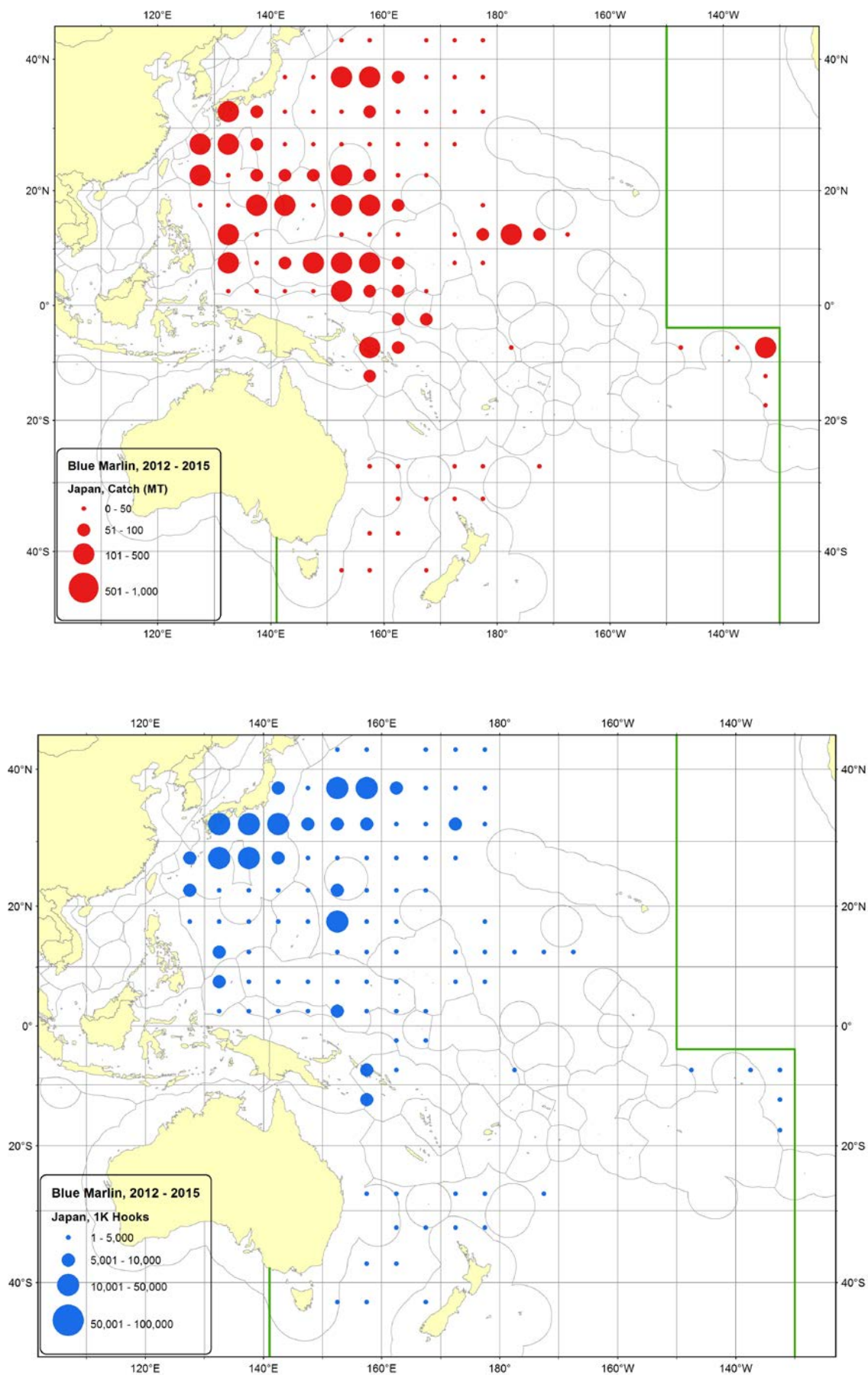


Figure 4. Blue Marlin (all years): summed Catch (mt) and 1K Hooks by Chinese Taipei, 1958-2014

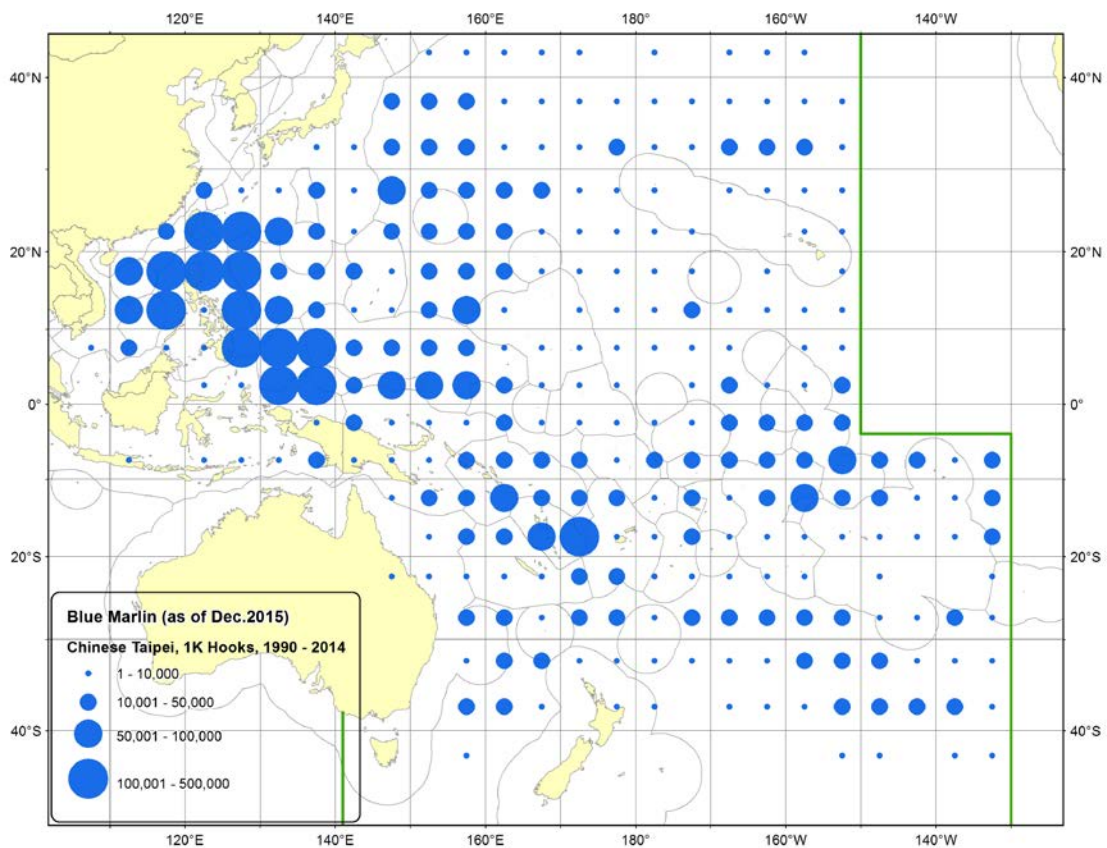
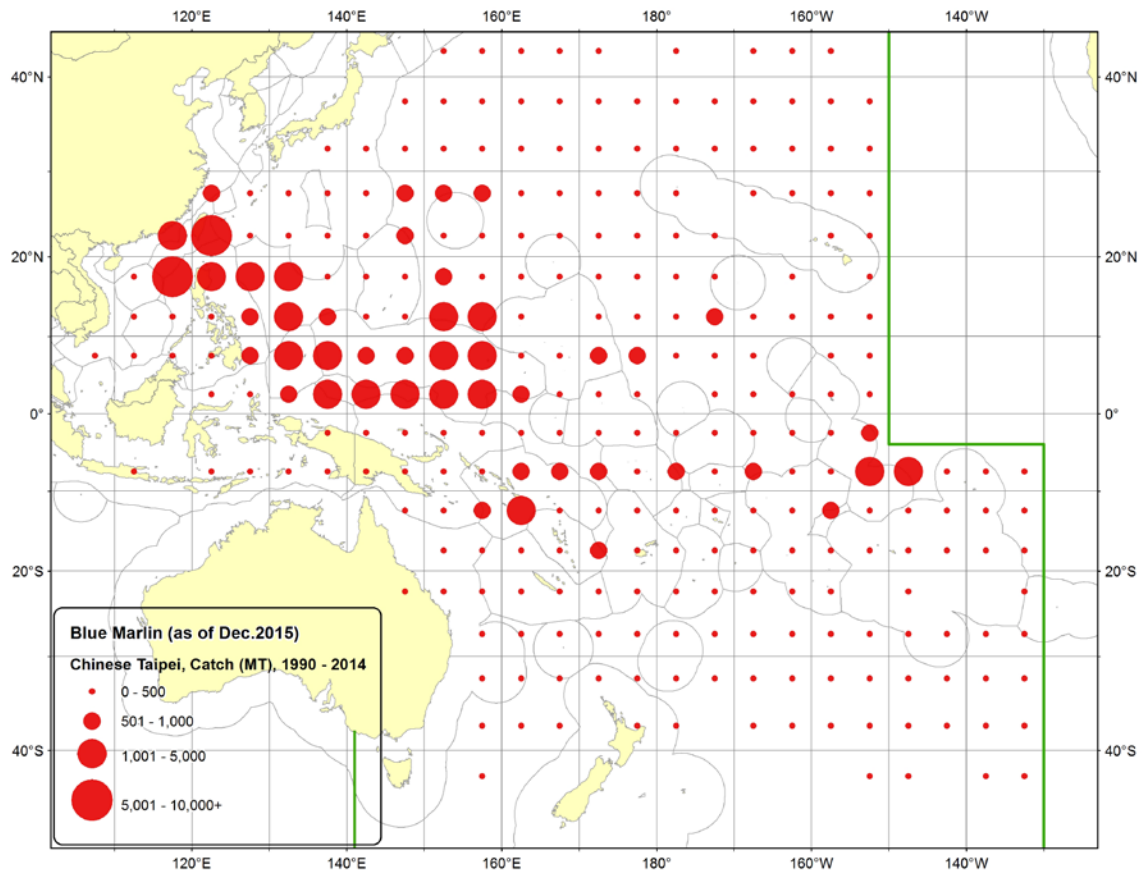


Figure 4. Blue Marlin: summed Catch (mt) and 1K Hooks by Chinese Taipei, 2012-2014

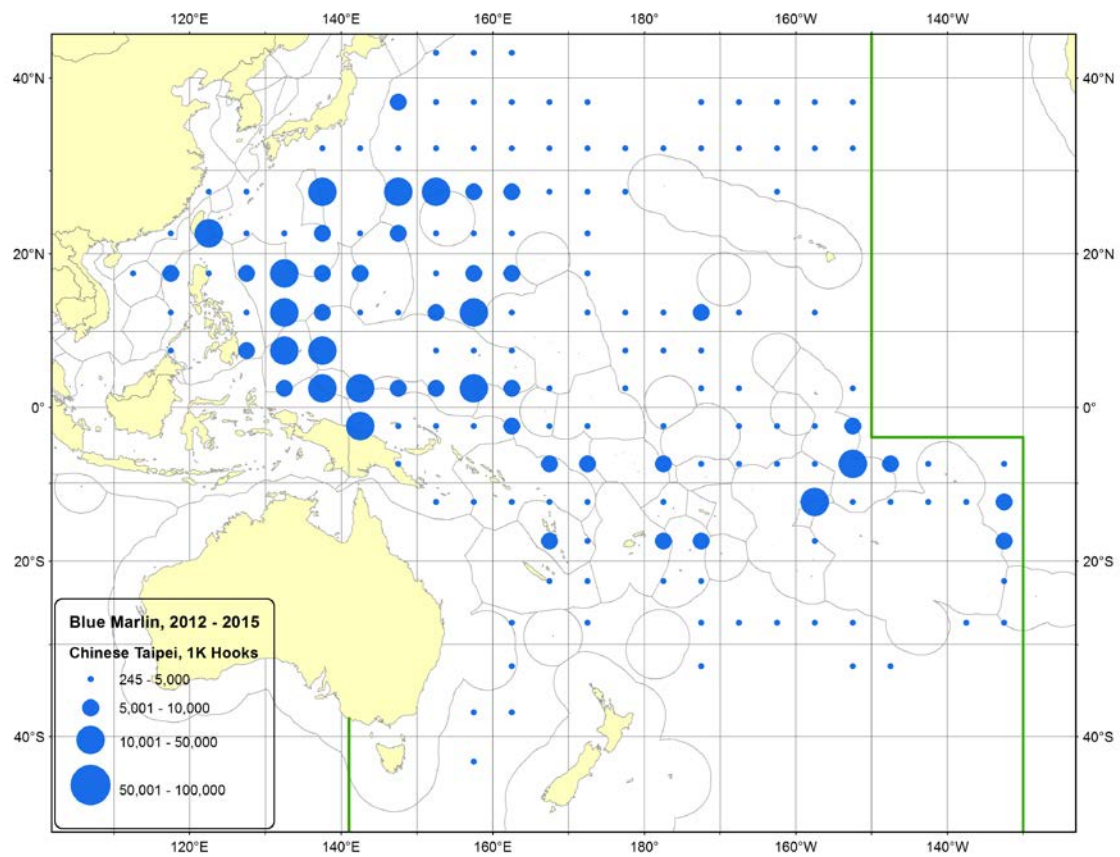
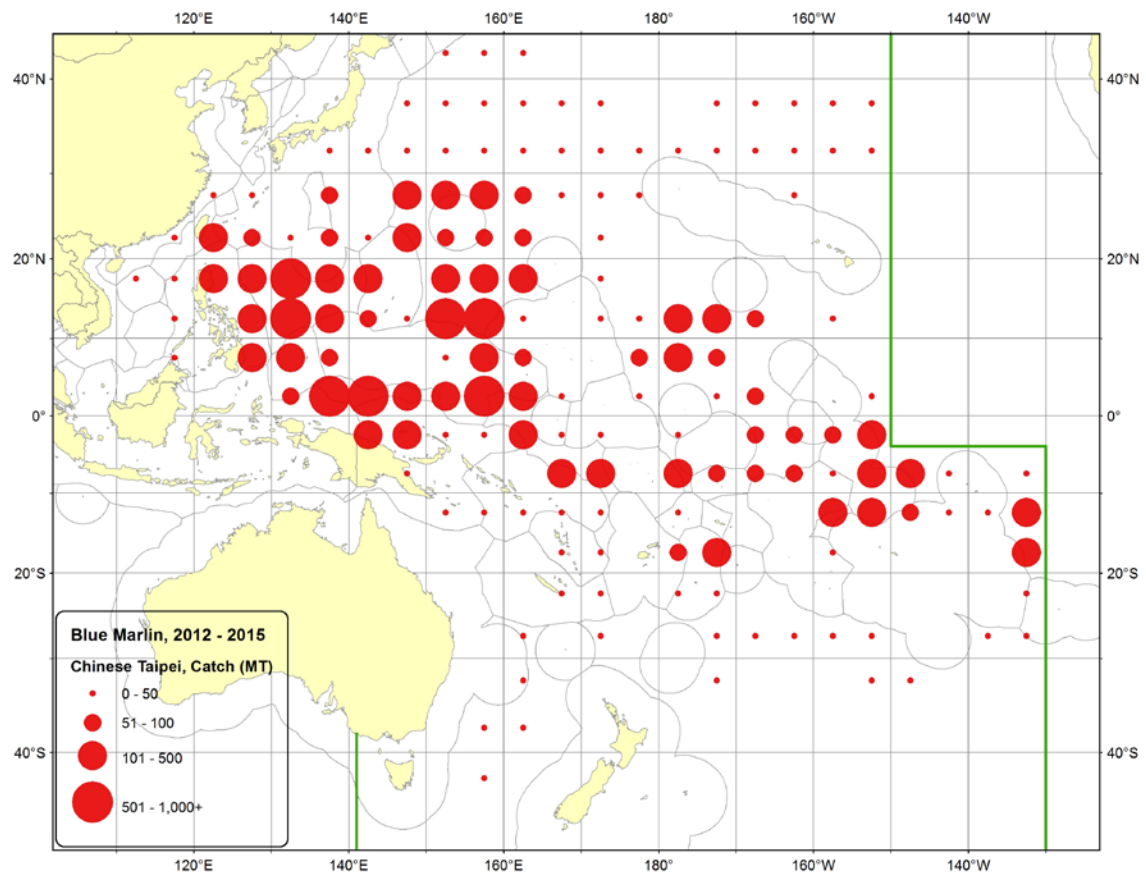


Figure 5. Blue Marlin (all years): summed Catch (mt) and 1K Hooks by Korea, 1975-2014

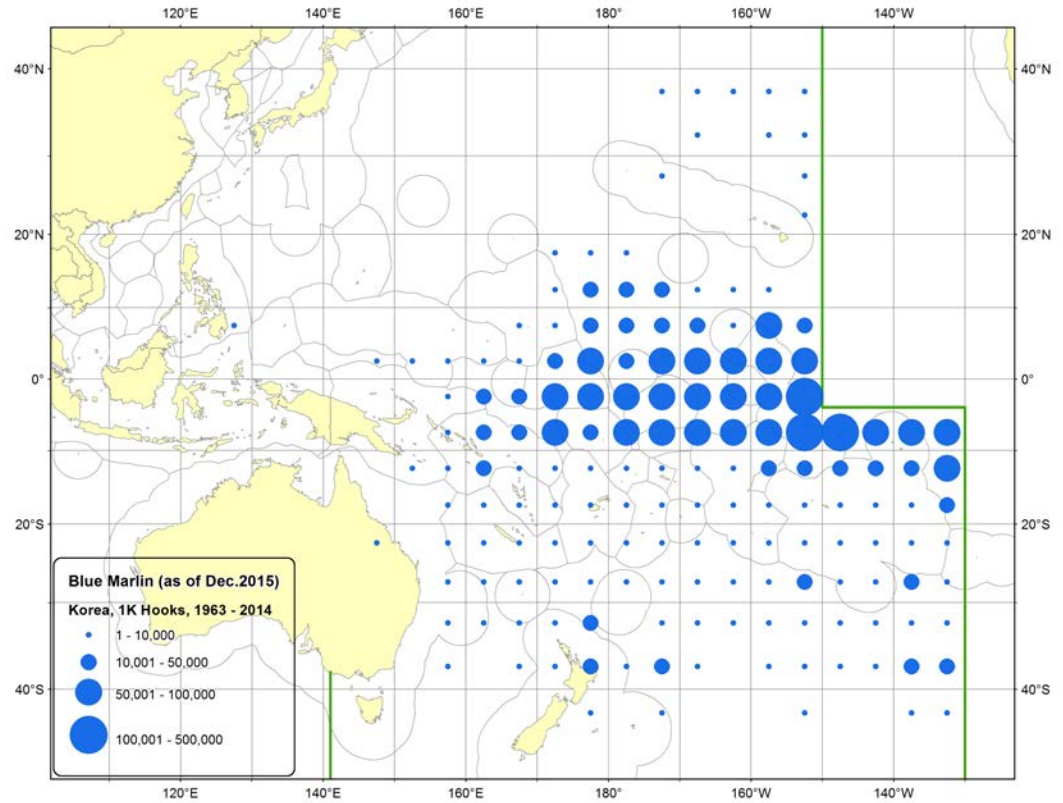
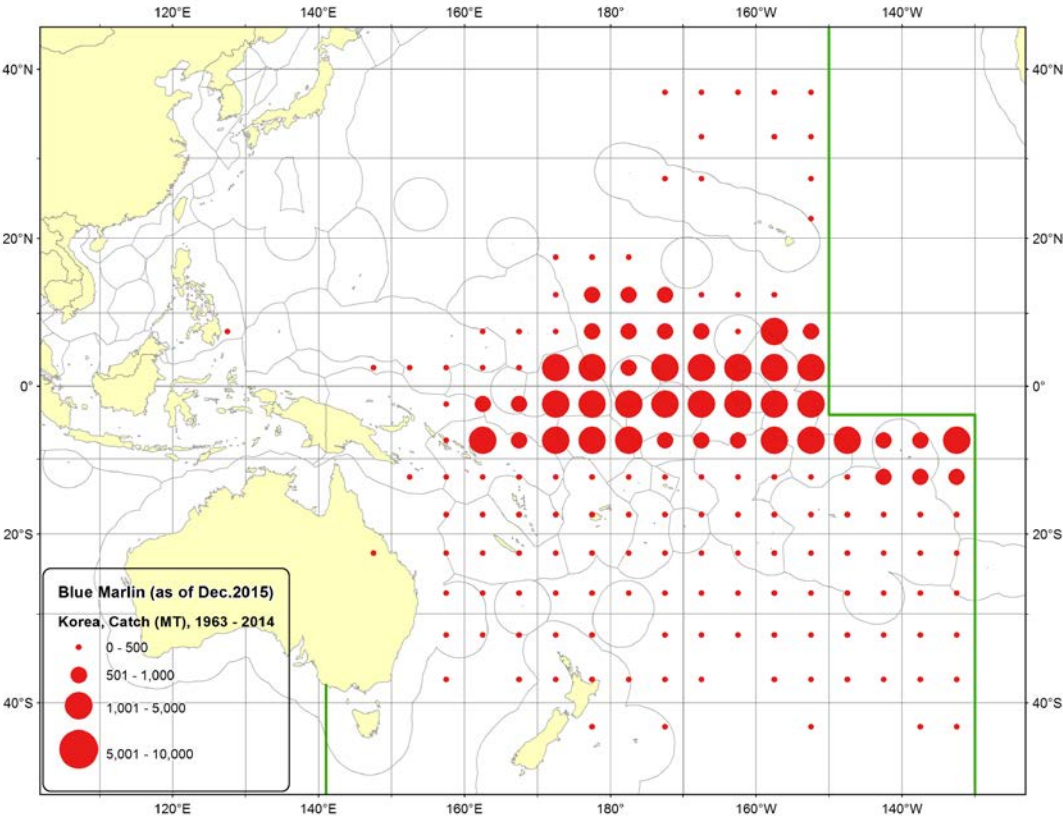


Figure 5. Blue Marlin: summed Catch (mt) and 1K Hooks by Korea, 2012-2014

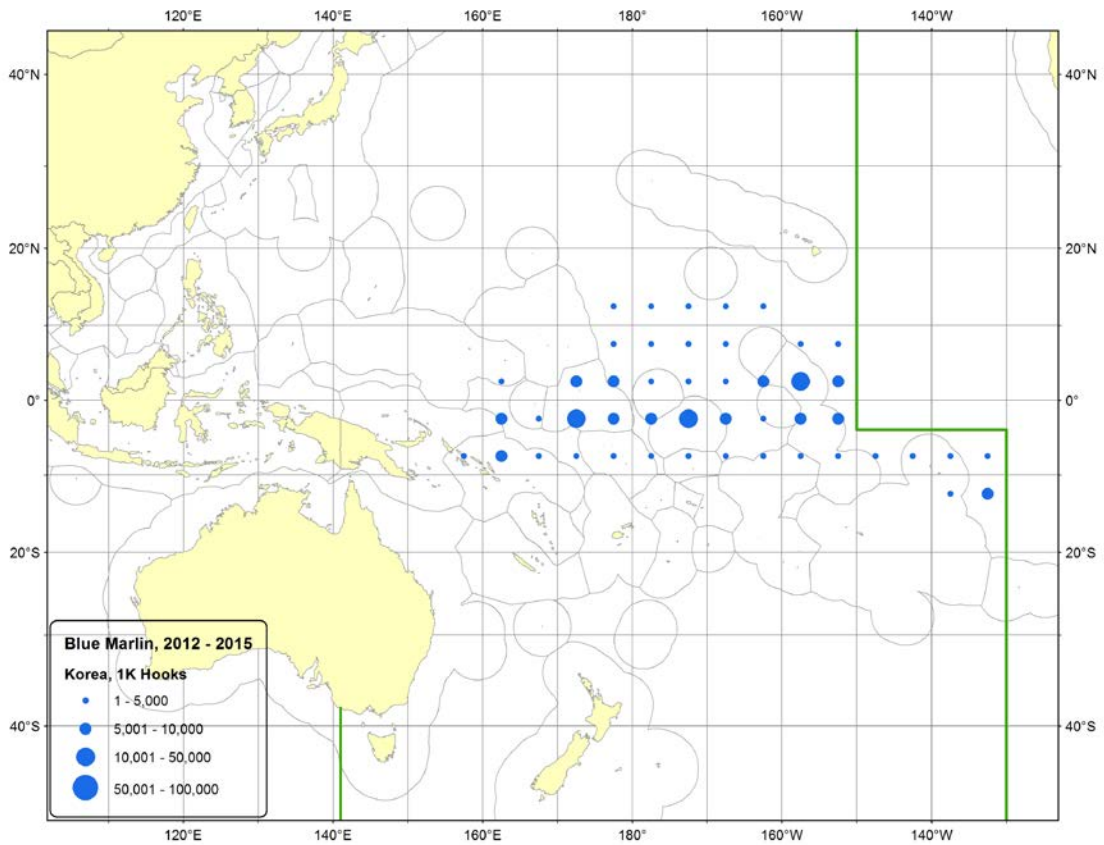
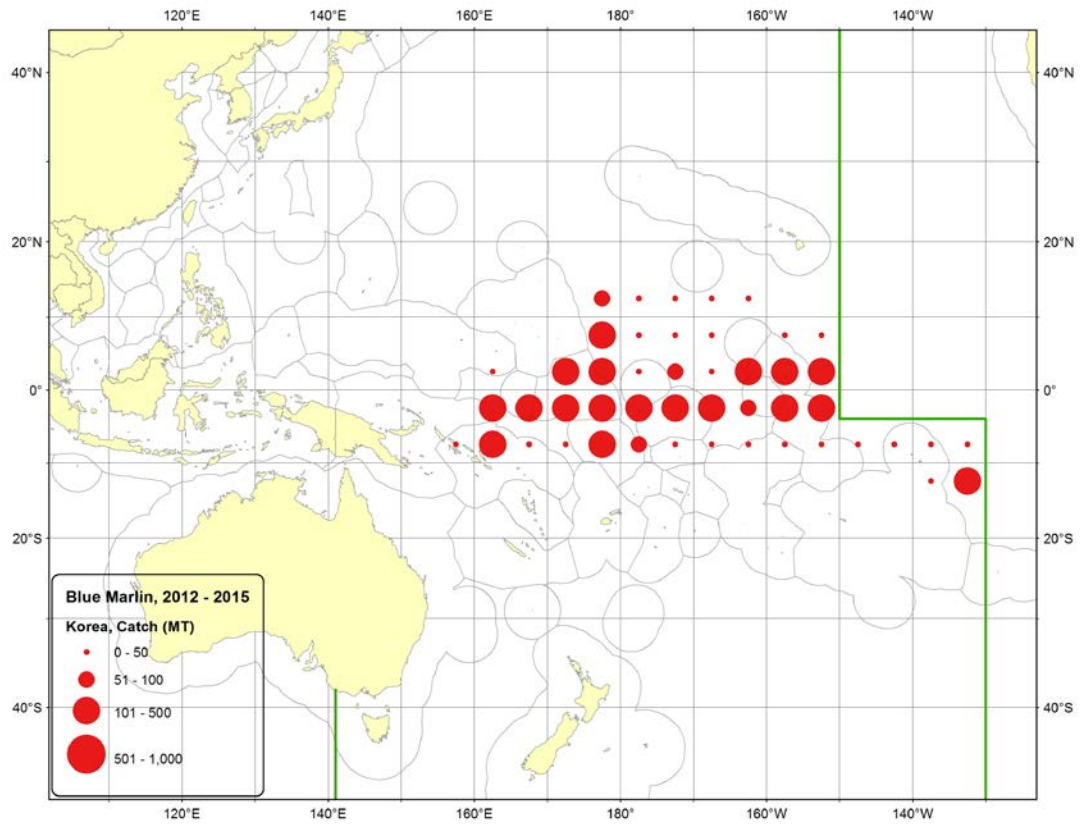


Figure 6. Blue Marlin (all years): summed Catch (mt) and 1K Hooks by Indonesia, 1978-2014

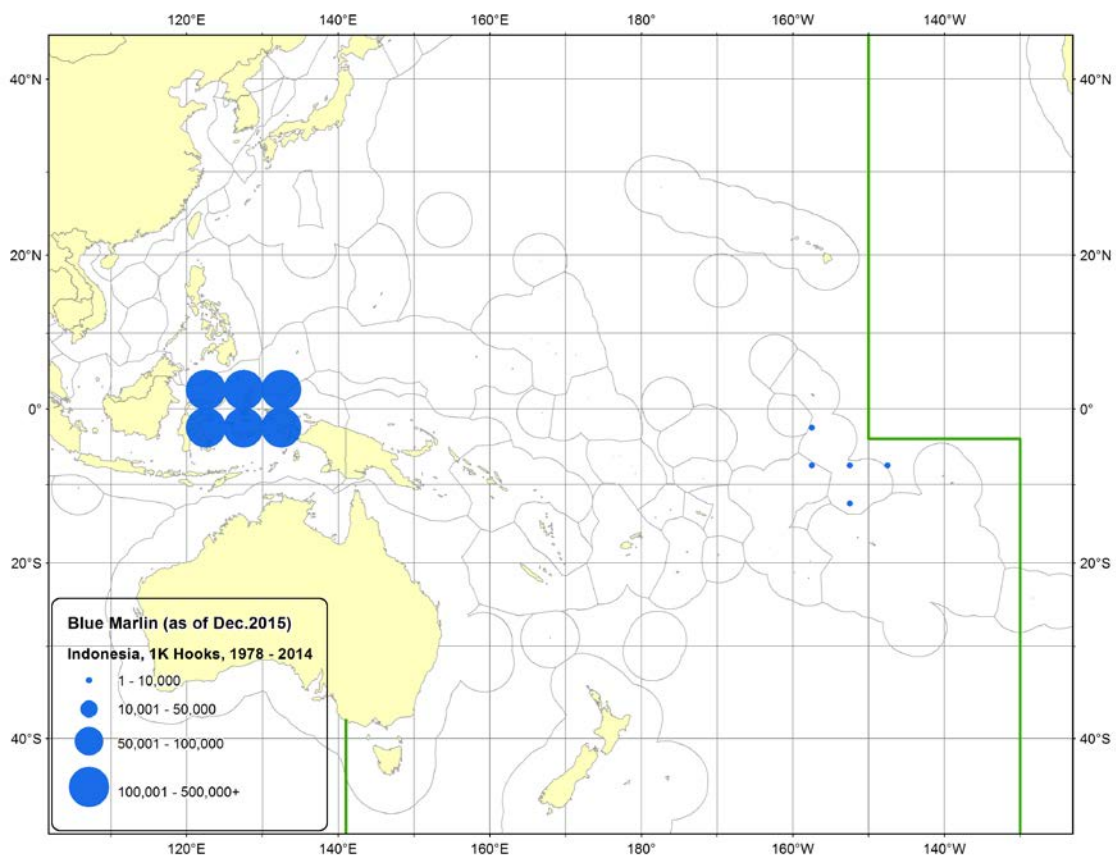
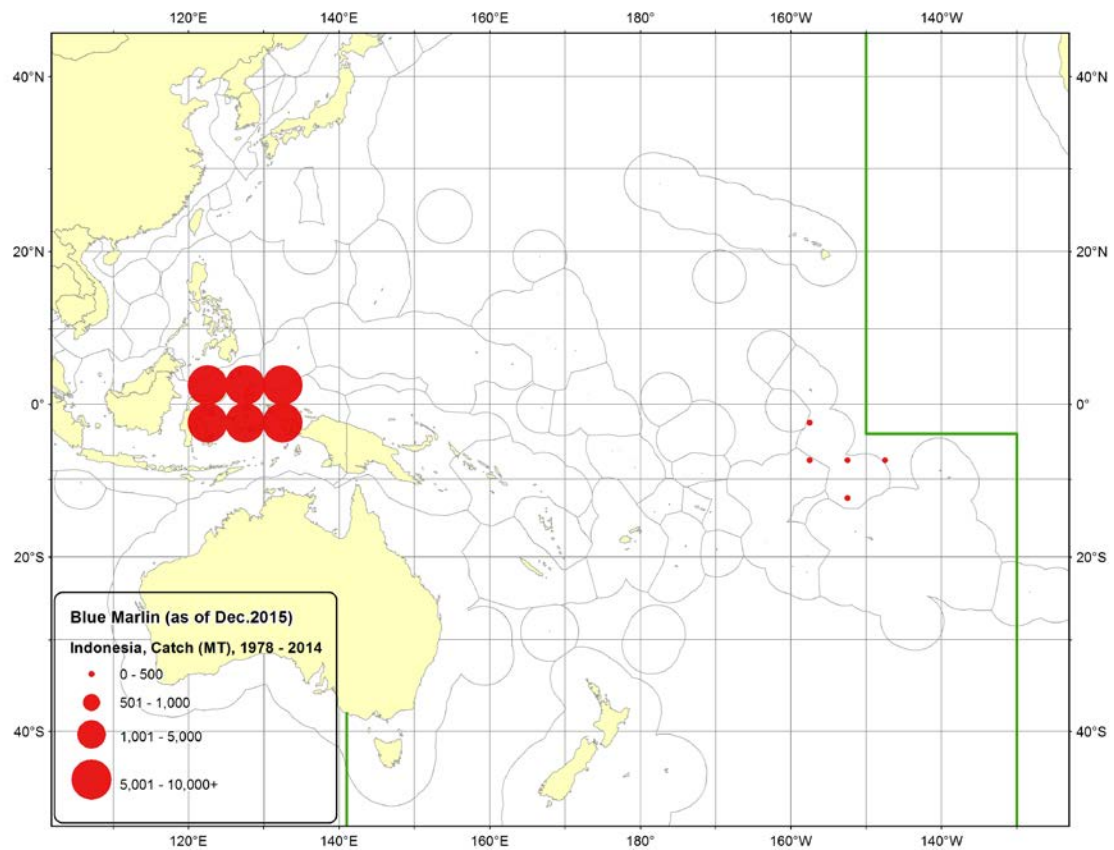


Figure 6. Blue Marlin: summed Catch (mt) and 1K Hooks by Indonesia, 2012-2014

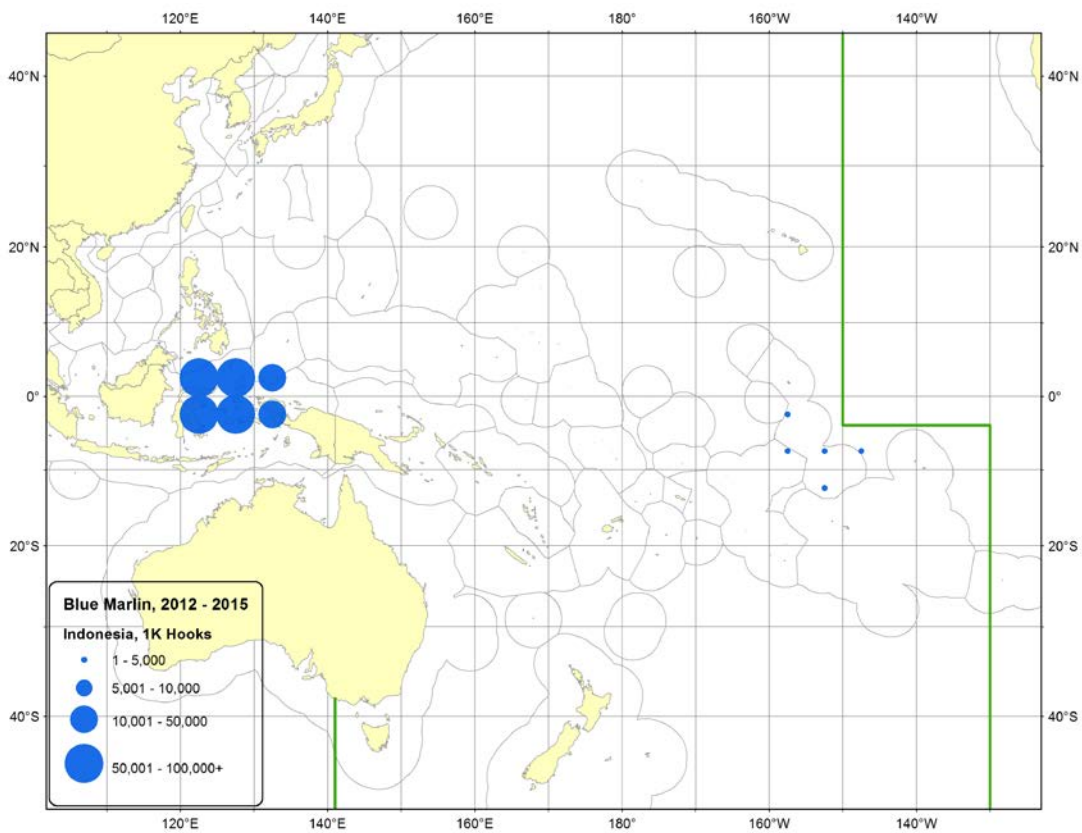
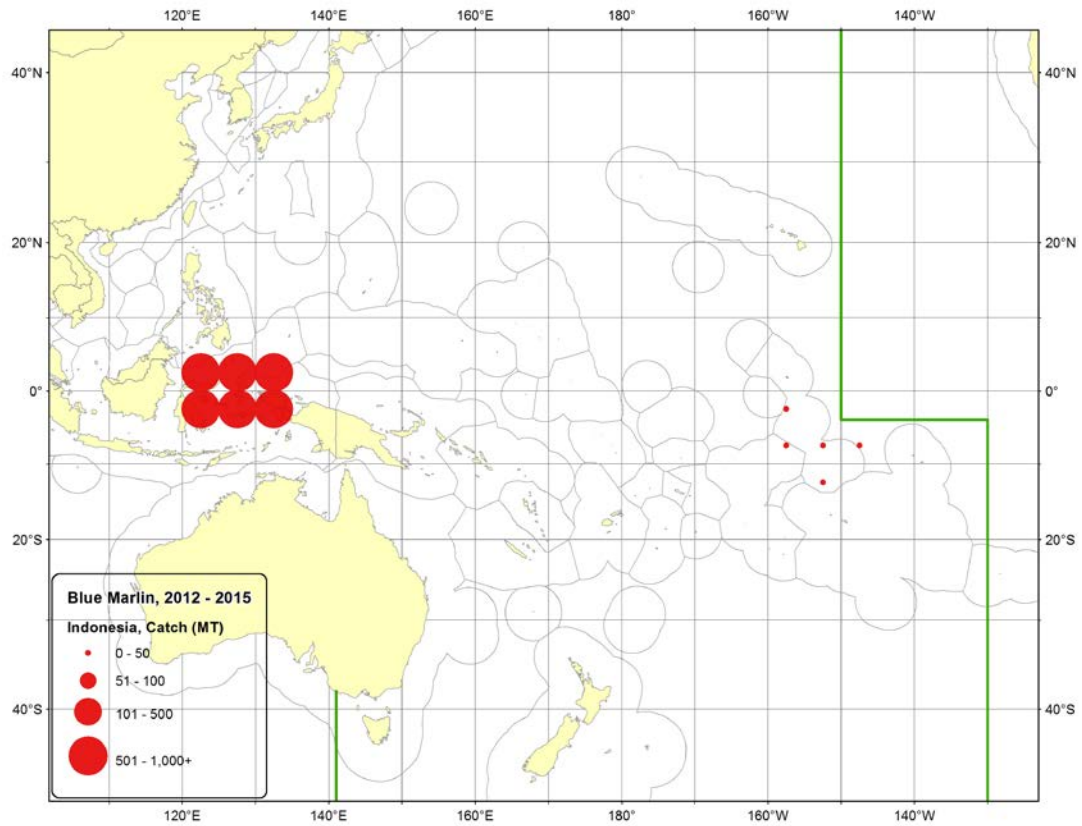


Figure 7. Blue Marlin (all years): summed Catch (mt) and 1K Hooks by China, 1988-2014

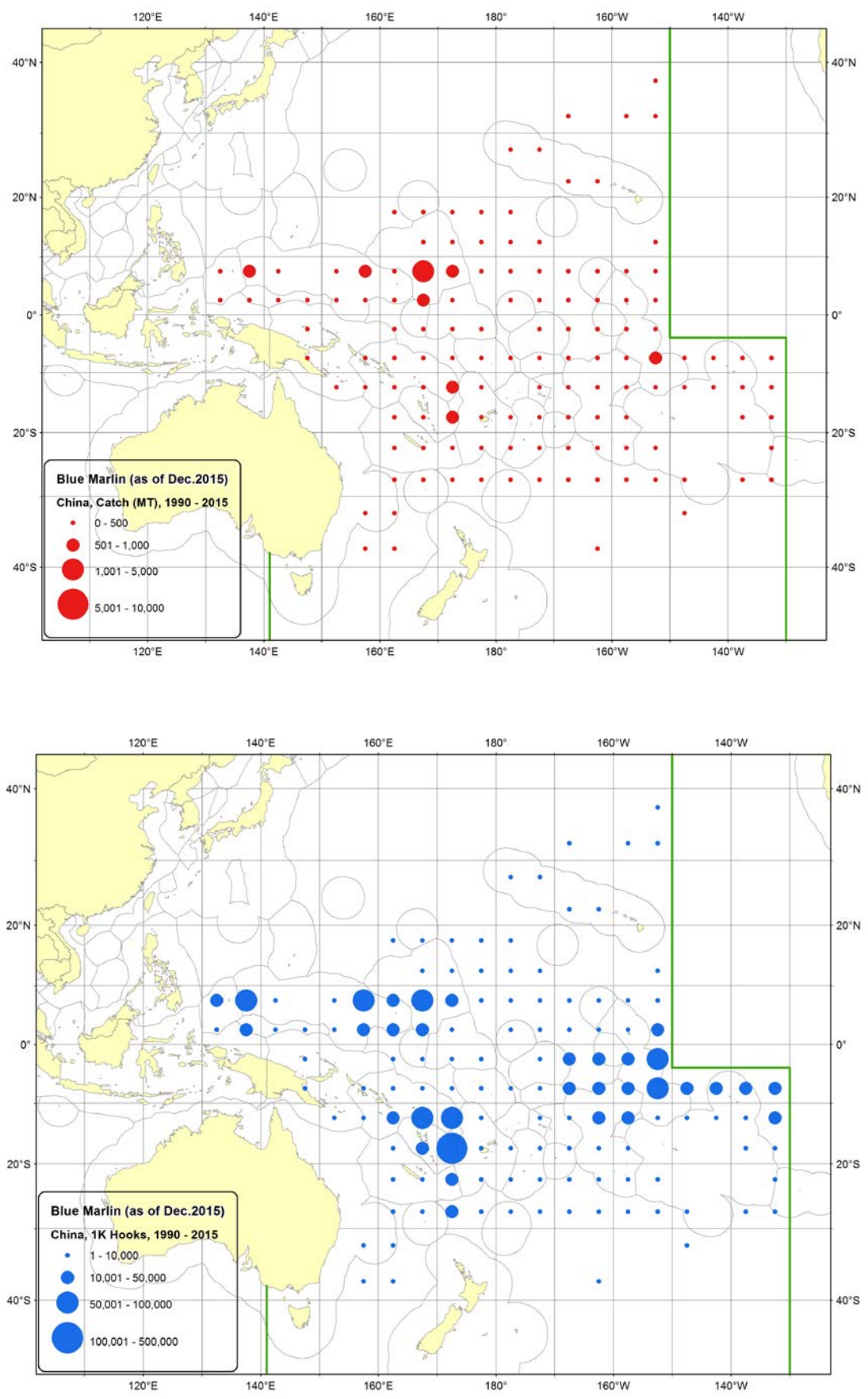


Figure 7. Blue Marlin: summed Catch (mt) and 1K Hooks by China, 2012-2014

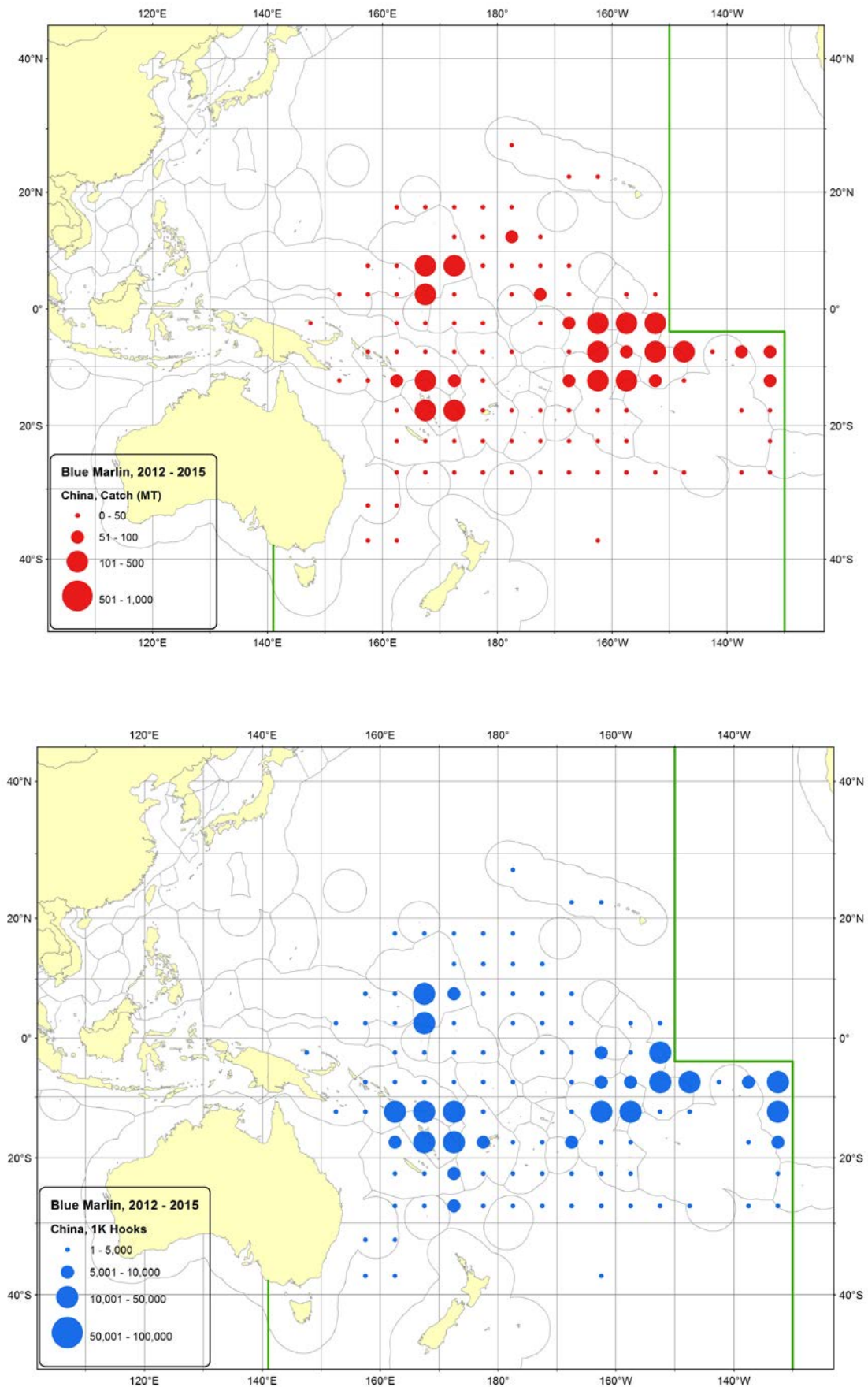


Figure 8. Blue Marlin (all years): summed Catch (mt) and 1K Hooks by the USA, 1980-2014

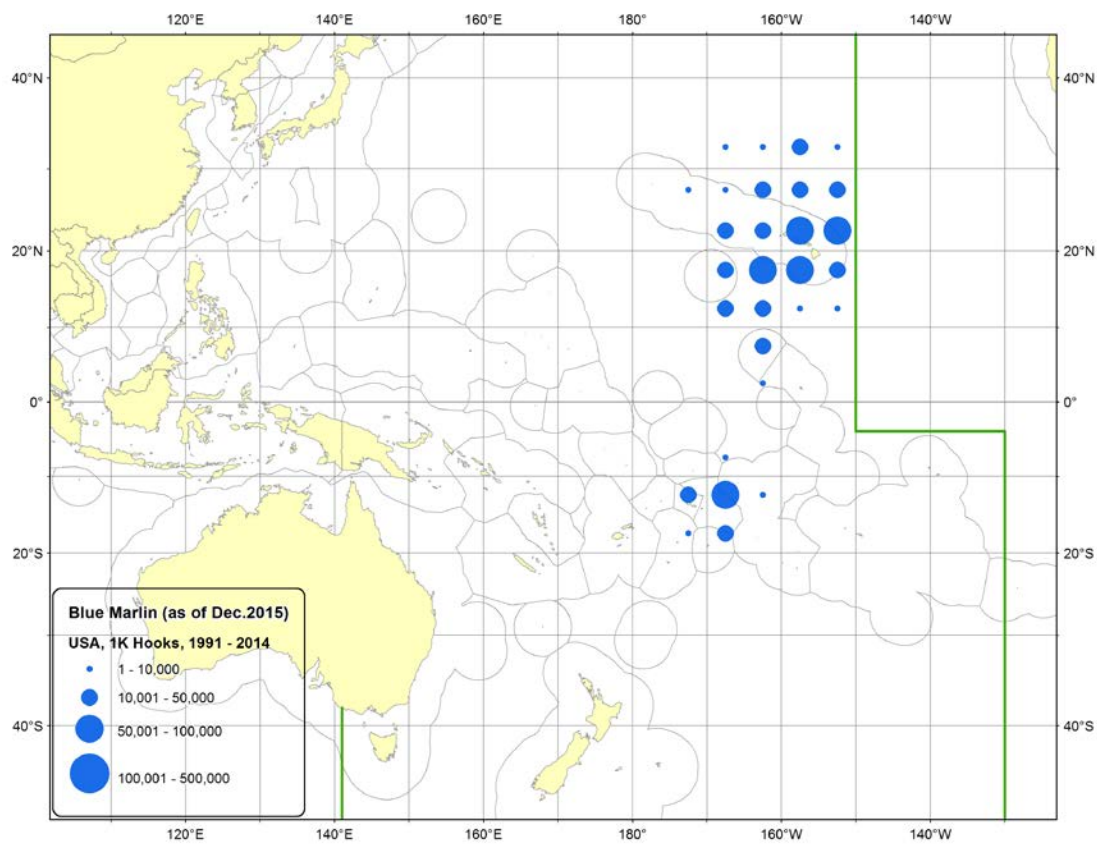
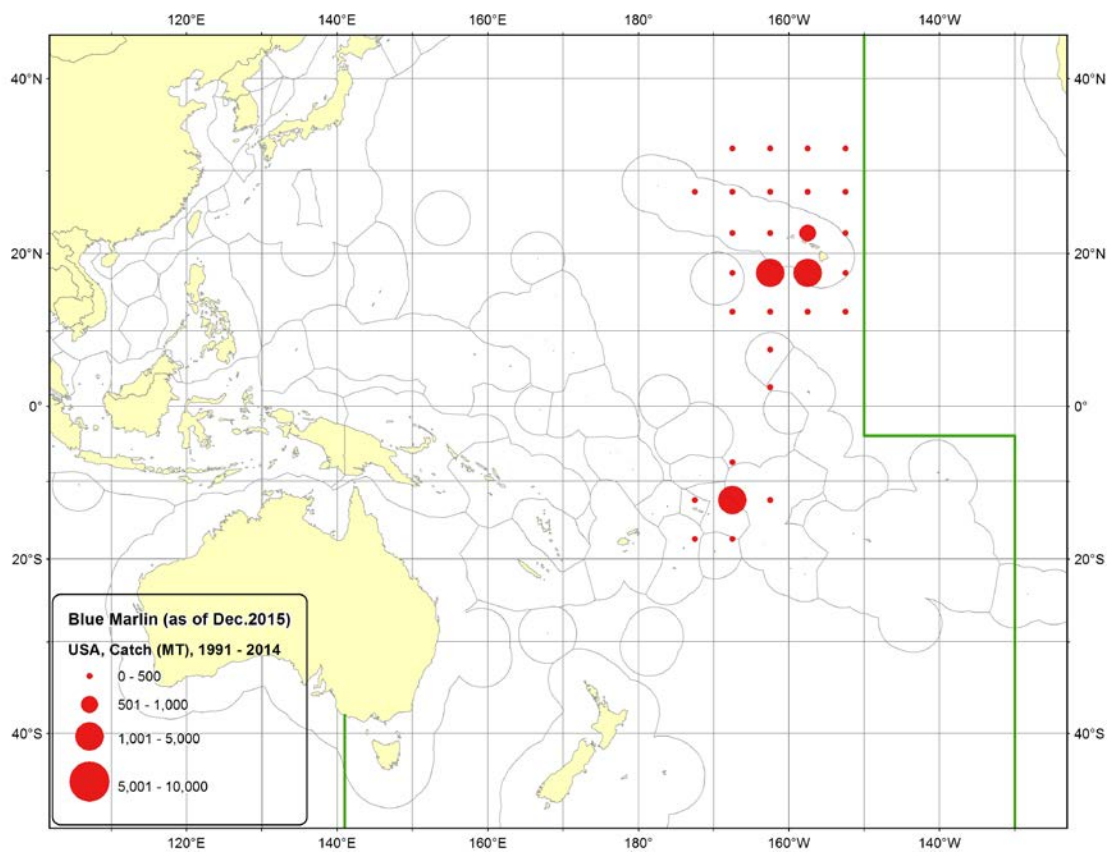


Figure 8. Blue Marlin: summed Catch (mt) and 1K Hooks by the USA, 2012-2014

